IV

ADDITIONS TO THE MAMMALIAN FAUNA FROM THE TECUYA BEDS, CALIFORNIA

By Chester Stock

With one plate

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CONTENTS

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INTRODUCTION

In 1920 Stock [1] described the fragmentary remains of three mammalian types (*Hypertragulus* sp., *Cœnopus* or *Diceratherium,* and a sciurid) from the Tecuya beds of Tecuya Canyon, California. Although the region was visited on several occasions during the past ten years, no additions were made to the vertebrate fauna until the summer of 1930, when a field party from the California Institute of Technology obtained materials of an oreodont and of a canid type.

The Tecuya beds may be the correlative of at least a portion of the Sespe deposits of southern California, which they resemble in certain stratigraphic relationships and lithologic characteristics. Since the description of the very incomplete fauna from this locality, mammalian remains have been collected in the upper Sespe of South Mountain, Ventura County. In view of the importance of establishing more clearly the faunal relations of these horizons, any additions to the assemblages are especially welcome. Record is therefore made of the newly obtained specimens from the Tecuya.

Promerycochœrus erythroceps n. sp.

Type specimen—No. 486 Calif. Inst. Tech. Coll., the anterior end of a skull with third incisor, premolars 1 to 4, and an incomplete first molar present.

Locality—Tecuya beds, Lower Miocene or Upper Oligocene, Tecuya Canyon, Kern County, California. C. I. T. Vert. Pale. Coll. Loc. 116.

Specific characters—Size approaching that of *Promerycochœrus superbus.* P3 without median crest and with anterior and posterior basins confluent.

Description—The red or maroon clay in which the specimen was found has imparted a red color to the skull and teeth. This has suggested the specific name. Although lacking entirely that portion of the skull behind the fourth premolar and the anterior ends of the nasals, No. 486 fortunately retains the upper premolar teeth.

The fragment of M1 shows considerable wear, but the premolars are moderately worn. In P4 a well-defined cingulum is present along the entire inner side. There is evidently no pit present at the antero-external corner of this tooth.

In P3 the anterior intermediate crest (of Loomis) is strongly developed and assists in the formation of an anterior enamel lake, but there is no evidence of a median crest. While the tip of the principal cusp is somewhat worn and the tooth is otherwise not entirely perfect in its preservation, the absence of the median crest can be definitely established. The inner anterior wall (anterior crescent) sweeps backward beyond the area of contact with the anterior intermediate crest and meets the forward extension of the

[1] C. Stock, Univ. Calif. Publ. Bull. Dept. Geol., vol. 12, pp. 267-276, 6 figs. in text.

thickened posterior crescent. This contact is clearly defined not only on the free edge but also along the entire height of the inner wall of the tooth.

The third premolar is particularly noteworthy because of total absence of a median crest. Loomis [1] has indicated that in *Promerycochœrus* this crest is weakly developed and there is consequently a suggestion of union of the anterior and posterior basins. In the Tecuya form this union has evidently been consummated, in which respect No. 486 differs from specimens of *Promerycochœrus* from the John Day and Lower Rosebud. In *Mesoreodon*, according to Loomis, the rear basin of P3 is enclosed by the posterior crescent.

P2 resembles the comparable tooth in specimens of *Promerycochœrus* from the John Day. A maxillary eminence, situated immediately above the postero-external rim of the alveolus for the canine, is sharply defined. Posterior to the end of the maxillonasal notch the nasals are broad, while anterior to this end they taper forward to their tips in a distance of 32 mm. In the appearance of the muzzle and the character of the nasal elements, No. 486 resembles *Promerycochœrus* much more closely than it does *Merycochœrus*.

Unfortunately there are at present no corresponding parts of skulls on which a direct comparison can be made between *P. erythroceps* and *Promerycochœrus*(?) *hesperus* from the upper Sespe of South Mountain. These types occur in deposits which may be of nearly the same age. The two forms apparently resemble each other in size.

Measurements (in millimeters) of No. 486

Length of premolar series, anterior end of P1 to posterior end of P4	59.3
P1, anteroposterior diameter	15.4
P1, transverse diameter	*a*7.8
P2, anteroposterior diameter	16.7
P2, greatest transverse diameter	10.1
P3, anteroposterior diameter	16.2
P3, greatest transverse diameter	11.7
P4, anteroposterior diameter	14.5
P4, greatest transverse diameter	17.
I3, transverse diameter	8.5
Width of palate between alveoli for first premolars	*a*58.5
Width of muzzle across maxillary eminences situated above canines	*a*77
Width across nasals at maxillo-nasal notch	38.6
Greatest anteroposterior diameter of anterior palatine foramen	22.8
Greatest transverse diameter of anterior palatine foramen	13.3

a, Approximate.

Daphœnus(?) ruber n. sp.

Type specimen—No. 845 Calif. Inst. Tech. Coll., a fragment of the left ramus of the mandible with P4, M1 and M2 and with the alveoli for P2, P3 and M3.

Locality—Tecuya beds, Tecuya Canyon, Kern County, California. Calif. Inst. Tech. Vert. Pale. Loc. 116.

Specific characters—Size slightly smaller than that of *Daphœnus vetus*. Trigonid area of M2 contracted in anteroposterior direction with paraconid

[1] F. B. Loomis, Bull. Amer. Mus. Nat. Hist., vol. 51, p. 10, 1924.

more reduced than in *D. vetus*. Size of teeth more nearly like that of *Paradaphœnus transversus* than like that of *Pericyon socialis*, but with jaw larger, relative to size of teeth, than in former species. Basins of molars shallow as in *Daphœnus*, differing noticeably in this respect from *Paradaphœnus*, less so from *Pericyon*.

Description—In No. 845 the lower premolars were long and, judged in the light of the character of P4, possessed crowns which were compressed laterally. The crushing portion of the dentition is well developed with the molars of different type than those of *Temnocyon* and *Mesocyon*.

The crown of P4 exhibits in addition to the principal cusp and posterior tubercle a small and narrow anterior shelf and a more extensive posterior shelf slightly ridged along the median line. No. 12450 Amer. Mus. Coll., a well-preserved skull from the Oreodon beds of the Brule formation, South Dakota, possesses a fourth lower premolar almost identical with that of the Tecuya species in size and in structure of crown.

M1 shows also considerable resemblance to the comparable tooth in *Daphœnus*. The metaconid is large, the hypoconid also large but low, and the basin of the heel shallow and bordered along the inner posterior side by a very low ridge. No entoconid is present as in *Cynodesmus*.

The trigonid region of M2 is well worn. Well-developed protoconid and metaconid were present, but the paraconid was evidently reduced or absent. This is suggested by the wearing surface and by the greater contraction of the trigonid area in anteroposterior direction than in *Daphœnus*. Judging from the size of the alveolus, M3 was relatively as large as that in the latter genus. No. 845 differs principally from No. 12450 in structure of crown of M2 and in the shape of the ramus.

In the Tecuya specimen the heels of the molars are not so wide nor so deeply excavated to form pronounced basin-shaped depressions as in *Paradaphœnus cuspigerus* and in these characters greater resemblance is shown to *Daphœnus*. In M2 the length of the trigonid in relation to the length of the tooth is shorter than in *Daphœnus* (No. 12450 Amer. Mus.) and in this respect greater approach is made to the type of *P. cuspigerus*. It is possible that in the latter this length is less than in the Tecuya specimen, but the difference is not great.

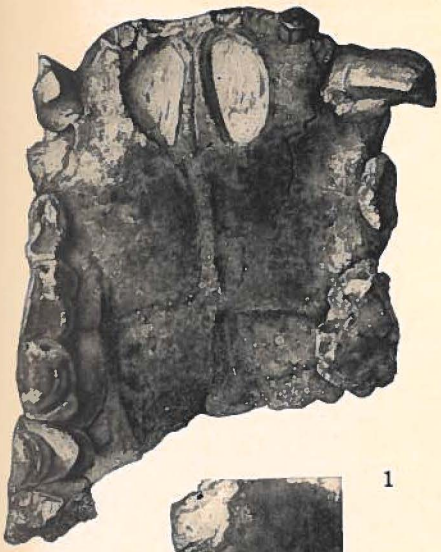
A larger mandible of *Paradaphœnus* from the John Day, No. 12714 Yale Peabody Mus. Coll., has been referred to *P. transversus*. No. 12714 resembles the Tecuya specimen more nearly in size of teeth but the ramus is more slender. The molars exhibit deep basins and M3 appears to have been smaller than in the Californian form.

Pericyon socialis is a distinctly larger type than No. 845. P4 may be relatively heavier than in the latter, but the molar teeth show resemblance to those in the Tecuya specimen. The basins are shallower than in *Paradaphœnus* but not so shallow as in No. 845. M3 is relatively large. In the essential characters of the heel of M1, shallowness of basins in M2, reduction of paraconid in the second molar, as well as the inferred large size of M3, the Tecuya form is more like *Pericyon* than like *Paradaphœnus*. No. 845 differs from *Pericyon* in size and to a less extent in the character of P4.

It is evident that *Daphœnus, Paradaphœnus, Pericyon* and the Tecuya form represent a group of related canid forms, with the last three somewhat advanced beyond the stage of development represented by *Daphœnus* from the White River. Possibly the type from the Tecuya beds will furnish, when better known, a connecting link between *Daphœnus* and *Pericyon*.

Comparative Measurements (in millimeters)

	Daphœnus (?) ruber n. sp. Type, No. 845 C.I.T. Coll.	Daphœnus vetus No. 10066 Y.P.M.	Daphœnus sp. No. 12450 A.M.N.H.	Daphœnus hartshornianus No. 1387 A.M.N.H.	Pericyon socialis Type No. 12715 Y.P.M.	Paradaphænus cuspigerus Type No. 6852 A.M.N.H.	Paradaphænus transversus No. 12714 Y.P.M.
Length from anterior end of $P\frac{4}{}$ to posterior end of $M\frac{2}{}$	33.0	34.7	32.7	31.6	40.4	22.1	34.0
$P\frac{4}{}$, anteroposterior diameter	11.5	11.4	11.0	....	13.1	7.7	11.8
$P\frac{4}{}$, greatest transverse diameter	4.4	5.3	4.3	....	6.0	3.3	4.6
$M\frac{1}{}$, anteroposterior diameter	13.7	14.9	13.6	13.7	17.1	9.2	14.5
$M\frac{1}{}$, greatest transverse diameter of heel	6.0	7.2	6.8	6.3	8.0	5.1	6.2
$M\frac{2}{}$, anteroposterior diameter	8.1	9.0	8.3	8.3	11.0	5.9	8.0
$M\frac{2}{}$, greatest transverse diameter across protoconid-metaconid	5.7	6.2	5.6	5.7	6.6	4.1	5.2
$M\frac{2}{}$, greatest transverse diameter across heel	4.8	5.7	5.4	5.0	6.2	4.4	5.2



1

2a

2

1a

1b

FIGS. 1, 1*a*, 1*b*—*Promerycochœrus erythroceps* n. sp. Type specimen, anterior portion of skull, No. 486 C.I.T. Fig. 1, palatal view; fig. 1*b*, dorsal view; x 2/3. Fig. 1*a*, occlusal view of cheek-teeth, slightly larger than natural size. Tecuya beds, Tecuya Canyon, Calif.

FIGS. 2, 2*a*—*Daphœnus* (?) *ruber* n. sp. Type specimen, ramus, No. 845 C.I.T., lateral and occlusal views; x 2/3. Tecuya beds, Tecuya Canyon, Calif.